REMARKS

Claims 1-40 are pending in this application. Claims 1, 11, 15, and 18 are independent.

Claim Rejection

Claims 1-11, 14-23, 28-40 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,450,615 ("Fortune") in view of U.S. Patent No. 5,654,715 ("Hayashikura") and William D. Stanley, "Electronic Communications Systems," Reston Publishing Company, Inc., 1982, pp. 513-514 ("Stanley"). Applicants respectfully traverse this rejection.

Claim 1

The claimed invention of **claim 1**, in a preferred embodiment, is directed to a millimeter band signal transmitting/receiving system (e.g., millimeter band signal transmitting/receiving system shown in Figures 1-4), comprising:

a stationary transmitter transmitting a millimeter band signal wave (e.g., transmitter 1 and antenna 31);

a propagation path forming portion forming at least one indirect propagation path (e.g., reflected wave 5) for propagation of said millimeter band signal wave; and

a stationary receiver (e.g., receiver 2 and antenna 32) including a receive antenna having a main lobe and a side lobe

receiving said millimeter band signal wave simultaneously from a plurality of propagation paths including a line of sight propagation path (e.g., direct wave 4) to said transmitter and said at least one indirect propagation path (e.g., reflected wave 5), and receiving said millimeter band signal wave from at least one of said plurality of propagation paths (present specification at page 9, lines 5-15; see also, Fig. 2).

The present invention is an improvement over a conventional indoor wireless LAN using millimeter band wave transmission. The known conventional wireless LAN typically transmits and receives millimeter band waves using omnidirectional antennas in order to obtain maximum coverage and avoid signal losses due to various nearby structures. In the case of using a wireless LAN for transmission of a video signal, a ghosting affect was found to occur due to multiple path interference (present specification at page 8, lines 19-27), i.e., resulting from simultaneous reception of propagation paths for a plurality of signal waves. At the same time millimeter band signal waves are known to suffer from complete signal loss when obstructed by a human body (present specification at page 9, lines 29-30).

Applicants' present invention is a solution to these problems. In particular, in order to prevent signal loss due to an obstruction by an object such as a human body, the present invention forms propagation paths in at least one indirect

propagation path as well as a direct line of sight propagation path, and includes a receiver that receives the wave signal simultaneously from the indirect and direct propagation paths. Based on this arrangement the receiver receives at least one of the propagation paths. (see present specification at page 9, lines 5-15).

In addition, Applicants found that by making the intensity of the received indirect propagation path within a limited range of the direct propagation path, the propagation paths were received simultaneously, and with good reception without any adverse affect such as ghosting. Applicants have found that the intensity of the indirect propagation path can be made within a suitable range of the direct propagation path when the reflected wave and direct wave are a main lobe and a side lobe of a transmitting/receiving antenna pair, respectively. In other words, the arrangement of the present invention forms the direct propagation path in the side lobe of the transmitting antenna. (specification at page 8, lines 24-27, and page 9, lines 5-15).

Furthermore, two propagation paths for a signal wave can be received within a suitable range of intensity, when the direction of maximum gain is a reflected propagation path formed by the main lobe of the transmitting antenna and received by the main lobe of the receiving antenna, and the line of sight propagation path is formed by a side lobe of the transmitting antenna and received by a

corresponding side lobe of the receiving antenna. A reason that the received two propagation paths of the signal wave are within a suitable range of intensity is due in part to attenuation of the reflected propagation path. Thus, the present invention uses the attenuation of the reflected propagation path to reduce the intensity of the reflected propagation path down to a suitable range of the line of sight propagation path, resulting in simultaneous reception of the signal wave from two propagation paths including an indirect propagation path.

Fortune

Fortune is directed to a method for prediction of RF propagation paths in a building. A disclosed application of Fortune's technique is to determine the optimum location of a base station for maximum coverage in the building. Fortune defines optimum coverage as being the location for the base station antenna such that, when the base station transmits a signal, the received power at locations throughout the building exceeds a predetermined value (column 4, lines 49-54). Fortune's technique is disclosed as a tool for evaluating several possible indoor communication system design alternatives (column 3, lines 15-17).

In an example communications system used to describe its technique, Fortune assumes that both the transmit and receive antennas are vertical half-wave dipoles (column 5, lines 18-20;

column 9, lines 42-44), i.e., omnidirectional antennas. Fortune discloses that other types of antennas can be used in its calculation technique by multiplying the calculated path loss by an antenna power gain in the direction of interest (column 6, lines 52-56).

Hayashikura

Hayashikura is directed to a system for monitoring a vehicle that uses a plurality of radar devices mounted along the periphery of the vehicle (Field of the Invention). Each of the transmitter sections of the radar devices transmit an electromagnetic wave and each of the associated receiver sections of the radar devices receive a reflected wave from an object. A distance to an obstacle is determined on the basis of a phase difference between the modulating signal of the transmitted wave and the demodulated signal obtained from the signal reflected from the object. The modulation period of the carrier wave is varied in accordance with the velocity of the vehicle. (Summary of the Invention). The carrier wave signal is provided at the millimeter band in the transmitter (column 3, lines 60-67).

Stanley

Stanley teaches basic principles of a directional antenna, and in particular shows an example radiation pattern having four minor

lobes and a major lobe. Stanley states that the intensity in the direction of the minor lobes will be less than the direction of the major lobe.

Differences over Fortune, Hayashikura, and Stanley

Applicants submit that Fortune appears to be directed to a method of predicting propagation paths in a building structure as a way of evaluating several possible communication system design alternatives, but does not teach a specific design for a communications system. Hayashikura and Stanley appears to teach aspects of particular elements recited in the claim, but do not provide information that would render the claim as a whole obvious in view of Fortune.

When considering the differences between the primary reference and the claimed invention, the question for assessing obviousness is not whether the differences themselves would be been obvious, but instead whether the claimed invention as a whole would have been obvious. Stratoflex Inc. v. Aeroquip Corp., 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983).

The present invention is directed to a transmitting/receiving system having a stationary receiver including a receive antenna having a main lobe and side lobe receiving a millimeter band signal wave simultaneously from a plurality of propagation paths including a line of sight propagation path. The present invention is an improvement over a conventional wireless communications system where a plurality of signal waves from various propagation paths

are received simultaneously causing multiple path interference (present specification at page 8, lines 19-23).

The Office Action relies on a section in Fortune that discusses a technique for calculating a total received power at a receiver point (column 5, line 43, to col. 6, line 67). Fortunes' technique takes into account reflection loss in its calculation of total received power, and has as an object to maximize total received RF power in evaluating alternative designs for communications systems (column 4, lines 49-54).

Appellants submit that Fortune does not disclose a constraint of simultaneous reception of a line of sight propagation path and at least one indirect propagation path of a signal wave. For the sake of argument, Appellants submit that using the technique disclosed in Fortune, an arrangement comparable to the known conventional LAN would most likely be the resulting design. In particular, because Fortune has an objective of maximizing RF power and does not disclose a constraint that requires simultaneous reception of multiple propagation paths for a signal wave, a receiving antenna would receive a line of sight propagation path before other reflected propagation paths that suffer from reflection losses, for a transmitted signal wave.

Neither Hayashikura or Stanley make up for the above stated deficiency, as they also fail to teach or suggest a transmitting/receiving system with a stationary receiver that

receives a transmitted millimeter band signal wave simultaneously from a plurality of propagation paths including at least one indirect propagation path.

As noted above, Applicants have determined that an arrangement where the line of sight propagation path is formed in a side lobe and a reflected propagation path is formed in the main lobe of a transmitting antenna, because of attenuation in the signal of maximum gain caused by the reflection, the reflected propagation path can be made to be received by the main lobe of the receiving antenna simultaneously with the line of sight propagation path received by the side lobe of the receiving antenna for a millimeter band signal wave. Thus, two propagation paths for a signal wave can be received within a suitable range of intensity, when the direction of maximum gain is a reflected propagation path formed by the main lobe of the transmitting antenna and received by the main lobe of the receiving antenna. The present invention is contrary to conventional wireless systems, which set the direction of maximum gain as the line of sight propagation path between two antennas.

Stanley teaches that an antenna having a main lobe is a type of directional antenna, but is silent with respect to direction of reception from multiple propagation paths. Hayashikura does not teach use of millimeter band signal waves in an indoor wireless communications system, and only teaches one propagation path.

In other words, Applicants submit, for the sake of argument, that even if Fortune's technique were to be used with directional antennas and millimeter band signal waves, there is not teaching or suggestion in any of the references cited in the rejection that would lead to a communications system design having a receive antenna arranged in such a manner that it would receive a millimeter band signal wave simultaneously from a plurality of propagation paths including an indirect propagation path.

Because the references do not teach the claim as a whole, Applicants submit that the rejection fails to establish *prima facie* obviousness for claim 1.

Claim 11

The claimed invention of **claim 11**, in a preferred embodiment, is directed to a millimeter band signal transmitting/receiving system (e.g., millimeter band signal transmitting/receiving system shown in Fig. 5), comprising:

a plurality of stationary transmitters (e.g., transmitters 10 and 11, and associated antennas 31A and 31B); and

a stationary receiver including a receive antenna (e.g., receiver 20 and antenna 32) having a main lobe and a side lobe arranged to simultaneously receive a plurality of millimeter band signal waves output from said plurality of transmitters (e.g., present specification at page 13, lines 2-4),

said plurality of millimeter band signal waves being transmitted from said plurality of transmitters having a same frequency (present specification at page 13, lines 6-7).

The Office Action states that Fortune teaches a plurality of signal waves transmitted from a plurality of transmitters having a same frequency "due to the same path length from the transmitter point 210." (Office Action at page 6). The Office Action points to sections in column 5 and 6 of Fortune as a basis for this statement. Applicants submit that Fortune does not even mention frequency of transmission, and much less that the frequency of a plurality of transmitters is the same such that the receive antenna simultaneously receives the plurality of signal waves from the transmitters. Fortune merely states that free-space loss is a function of path length. Applicants submit that even if the path length were the same for a plurality of transmitters, that characteristic alone does not teach or suggest that the frequencies of each of the transmitters is the same.

Accordingly, Applicants submit that the rejection fails to establish *prima facie* obviousness for claim 11.

Claim 15

Similar to claim 1, claim 15 also recites "a stationary receiver including a receive antenna having a main lobe and a side lobe receiving said millimeter band signal wave simultaneously through a plurality of propagation paths." Thus, the same argument

made in the above for claim 1 applies as well to claim 15. As mentioned above, Applicants submit that Fortune teaches an objective of maximizing received RF power and does not disclose as a constraint a requirement of simultaneous reception of multiple propagation paths for a transmitted signal wave. Fortune teaches only that reflected propagation paths have a characteristic reflection loss that needs to be taken into account when computing total received RF power. (e.g., see column 6, lines 39-52).

Accordingly, Applicants submit that the rejection fails to establish *prima facie* obviousness for claim 15.

Claim 18

The claimed invention of **claim 18**, in a preferred embodiment, is directed to a millimeter band signal transmitting/receiving system (e.g., millimeter band signal transmitting/receiving system shown in Figures 1-6), comprising:

at least one stationary transmitter (e.g., transmitter 1, or transmitters 10 and 11) transmitting a millimeter band signal through an associated transmit antenna (e.g., antenna 31, or antennas 31A and 31B) along a plurality of propagation paths (direct wave 4 and reflected wave 5, D wave, or E wave) of said millimeter band signal formed by said associated transmit antenna including a line of sight propagation path between said associated transmit antenna and a receive antenna (e.g., direct wave 4, D wave, or E wave);

a stationary receiver (e.g., receiver 2 or receiver 20) receiving the millimeter band signal through said receive antenna having a main lobe and a side lobe (e.g., disclosed in the present specification at page 9, lines 5-8),

wherein, in a normal state when said line of sight propagation path is unobstructed, said receiver receives the millimeter band signal through each of the plurality of propagation paths including said line of sight propagation path (present specification at page 8, lines 11-13), and

wherein, in an obstructed state when said line of sight propagation path is obstructed, said receiver receives the millimeter band signal through each of the plurality of propagation paths except said line of sight propagation path (e.g., see Fig. 2, present specification at page 8, lines 29-30).

The Office Action states that Fortune's transmit antenna 211 teaches the claimed transmit antenna, and that propagation paths 217 and 219 teach the claimed plurality of propagation paths formed by the transmit antenna. The Office Action states that Fortune's receive antenna 215 teaches the claimed receive antenna. Furthermore, the Office Action states that a section in Fortune pertaining to the recursive analysis approach to predicting propagation teaches the claimed "normal state" and "obstructed state." In particular, with respect to the "normal state" the Office Action relies on a section in Fortune which states that,

"The propagation prediction process begins with the calculation of a received power value for a direct path 217 from transmitter point 210 to receiver point 212. This direct path 217 is the straight-line path from the transmitter point 210 to the receiver point 212, which may or may not pass through a surface such as a wall, but which does not include reflections from surfaces." (column 5, lines 43-49).

The Office Action also points to a statement in Fortune which discusses the alternative roles at each transmitter point and receiver point, as teaching the function of the claimed receiver in the normal state (referring to column 6, lines 62-63). Appellants do not understand why this section is referred to.

With respect to the "obstructed state," the Office Action relies on a section in Fortune which states that,

"Transmission losses result when the propagation path passes through an obstruction such as a surface. This transmission loss is determined and normalized in accordance with the recursive procedures set forth above and described in greater detail in the aforementioned Ramo textbook. For example, if the direct path does not include any obstacles, the normalized transmission loss is 1, whereas if an obstacle completely blocks an RF signal, the normalized transmission loss is 0. The total propagation loss for the direct path is calculated as the product of the free-space loss and the normalized transmission losses. The power received at the receiver point 212 from the direct path may be determined from the total direct path propagation loss. These calculations are well known to those skilled in the art, and are performed using conventional methods such as those set forth in the Ramo reference. Next, received power for all one-reflection paths 219 are calculated, followed by all paths involving two reflections." (column 5, line 57, to column 6, line 7).

The Office Action relies on a section in Fortune for teaching the function of the claimed receiver in the obstructed state, which states that,

"Note that reflection path losses and direct path losses can be scaled for different types of antennas simply by multiplying the total calculated path loss by the antenna power gain in the direction of interest." (column 6, lines 52-56).

Appellants assume that the purpose of the later section is to show that the receive antenna of Fortune can be alternative types of antennas, and to take into account an alternative type of antenna, the power calculation involves an additional factor of antenna power gain.

In any case, Appellants submit that Fortune fails to teach a stationary antenna that has both a normal state and an obstructed state as recited in claim 18. In particular, unlike Fortune, the present claimed invention includes, among other things, a stationary transmitter having an associated transmit antenna transmitting a signal along a plurality of propagation paths including a line of sight propagation path to a receive antenna of a stationary receiver. In a normal state, the line of sight propagation path between the stationary transmitter and the stationary receiver is unobstructed. In an obstructed state, the line of sight propagation path between the stationary transmitter and the stationary receiver is obstructed.

In Fortune, on the other hand, for a given transmitter point 210 to a given receiver point 212, a total direct path propagation loss will be calculated. The total propagation loss would be based

on factors including path length (free-space loss), losses due to a path through an obstruction, or due to obstacles. In other words, for a given pair of points used in the path prediction, there is only one state, which could be any of a continuum of unobstructed path to an obstructed path depending on obstructions and/or obstacles along the path. (e.g., see examples illustrated in Figures 7-9).

In addition, Fortune discloses a technique for prediction of RF propagation, and does not disclose a final communication system design. Thus, Appellants submit that a particular transmitting/receiving system such as that of the present claimed invention is not disclosed in Fortune. Fortune does not appear to disclose a resulting location of a transmitter and a receiver that would exhibit the properties of the claimed invention. In other words, Appellants submit that there are more factors involved in the present invention than merely replacing the receive antenna with an antenna having a main lobe and a side lobe, and merely using a millimeter band signal wave instead of a conventional RF signal, as alluded to in the Office Action.

The Office Action states that Fortune doesn't specifically disclose a millimeter band transmitting/receiving system, and instead relies on the teachings of Hayashikura. However, Hayashikura also does not at least teach the claimed "normal state"

and the claims "obstructed state" for a stationary received, and thus, does not make up for the deficiency in Fortune.

The Office Action relies on Stanley for teaching that it is notoriously well known in the art that a main lobe and a side lobe is part of a conventional directional antenna. Appellants agree that an antenna having a main lobe and a side lobe constitutes a directional antenna. However, Appellants submit that Stanley merely indicates the obviousness of the claimed element, and that Stanley in combination with Fortune and Hayashikura fail to teach the claim as a whole. Appellants submit, for example, that Stanley, Fortune, and Hayashikura fail to suggest a receive antenna having a main lobe and a side lobe that, together with a stationary transmitter having a transmit antenna, functions in both a normal state and an obstructed state as in the present claimed invention.

Accordingly, Applicants submit that the rejection fails to establish *prima facie* obviousness for claim 18.

Claims 38, 39 and 40

The claimed invention of **claim 38**, in a preferred embodiment, is directed to the millimeter band signal transmitting/receiving system of claim 1, wherein said at least one indirect propagation path is formed in a main lobe of a transmit antenna (present specification at page 9, lines 5-8).

The claimed invention of **claim 39**, in a preferred embodiment, is directed to the millimeter band signal transmitting/receiving

system of claim 1, wherein said line of sight propagation path is formed in a side lobe of a transmit antenna (present specification at page 9, lines 5-8).

The claimed invention of **claim 40**, in a preferred embodiment, is directed to the millimeter band signal transmitting/receiving system of claim 15, wherein said line of sight propagation path is formed in a side lobe of a transmit antenna (present specification at page 9, lines 5-8).

As has been disclosed in the present specification, Applicants have found that by providing a transmitter and receiver such that the direct wave propagation path and the reflected wave propagation path are simultaneously received by the receiver that good reception is received whether the direct wave propagation path is obstructed, or not. In other words, Applicants' invention ensures reliable reception of at least one propagation path for a signal wave without suffering from the problem of multiple paths for different signal waves. In a preferred embodiment, the present invention provides simultaneous reception of propagation paths for a signal wave by an arrangement where the reflected propagation path and direct propagation path are a main lobe and a side lobe of the transmitting/receiving antenna, respectively (page 9, lines 5-8). In other words, unlike the known conventional wireless LAN which relies on a line of sight propagation path for the transmitted signal, the present invention arranges the antennas

such that a reflected propagation path is formed in a main lobe of a transmit antenna, whereas the line of sight propagation path is instead formed in a side lobe of the transmit antenna.

Applicants submit that Fortune is completely silent with respect to an arrangement for a directional transmit antenna. With respect to claim 38, the Office Action admits that Fortune, as well as Hayashikura do not specifically disclose the at least one indirect propagation path is formed in a main lobe of a transmit antenna. Instead, the Office Action relies on Stanley for making up for the deficiency.

Though Stanley does appear to teach the principle that a directional antenna has a main lobe, Applicants submit that Stanley fails to teach formation of an indirect propagation path for a millimeter band wave in a main lobe of a transmit antenna.

Similarly with respect to claims 39 and 40, though Stanley does appear to teach the principle that a directional antenna has a side lobe, Applicants submit that Stanley fails to teach formation of a line of sight propagation path in a side lobe of a transmit antenna.

<u>Claim Rejection- 35 USC 103: Kagami</u>

Claims 12, 13, 24-26 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Fortune, Hayashikura, and Stanley, and further in view of U.S. Patent 5,479,443 ("Kagami").

Note that the statement of the rejection in the Office Action appears to be in error, as it leaves out the reference, Stanley. In any case, Applicants respectfully traverse this rejection.

Claim 12 is directed to a millimeter band signal transmitting/receiving system of claim 11, wherein each of a plurality of transmitters includes a local oscillator oscillating at a prescribed local oscillation frequency for generating the signal wave at the same frequency (an example of the claimed arrangement is shown in Figure 5).

Claim 13 is directed to the millimeter band signal transmitting/receiving system of claim 12, wherein the local oscillators are in synchronization with each other.

Thus, the arguments in the above for claim 11, apply as well to claims 12 and 13.

The Office Action relies on Fortune for teaching a plurality of stationary transmitters and stationary receiver of claim 11. Kagami is relied on for teaching the additional claimed elements recited in claims 12 and 13.

Kagami is directed to a digital radio-relay system having a transmitting terminal station and at least one repeater station (Abstract). Kagami discloses wherein the system includes a transmitting terminal station 320 having a pair of modulators 324-1 and 324-2 coupled with a pair of transmitters 322-1 and 322-2 (Figure 10). The transmitters 322-1 and 322-2 are supplied with a

common reference frequency by a common oscillator 321, such that a horizontal polarized wave is transmitted in-phase with a vertical polarized wave (column 9, lines 42-47). Each transmitter has a phase lock oscillator, a frequency mixer and a high power amplifier. A non-regenerative repeater station 300 has an antenna 310 for receiving the H polarized wave and V polarized wave.

Appellants submit that Kagami fails to make up for the deficiency in Fortune of teaching a stationary receiver with a receive antenna having a main lobe and a side lobe arranged to simultaneously receive a plurality of propagation paths for millimeter band signal waves. Thus, at least for this reason, Appellants submit that the rejection fails to establish prima facie obviousness for claims 12 and 13. Accordingly, Appellants request that the rejection be withdrawn.

Claim 25 is directed to a millimeter band signal transmitting/receiving system of claims 18 and 24, wherein each of a plurality of transmitters includes a local oscillator oscillating at a prescribed local oscillation frequency for generating the signal wave at the same frequency (an example of the claimed arrangement is shown in Figure 5).

Claim 26 is directed to the millimeter band signal transmitting/receiving system of claim 25, wherein the local oscillators are in synchronization with each other.

Thus, the arguments in the above for claim 18, applies as well to claims 25 and 26.

The Office Action relies on Fortune for teaching a plurality of stationary transmitters and stationary receiver of claim 18. Kagami is relied on for teaching the additional claimed elements recited in claims 25 and 26.

Kagami is directed to a digital radio-relay system having a transmitting terminal station and at least one repeater station (Abstract). Kagami discloses wherein the system includes a transmitting terminal station 320 having a pair of modulators 324-1 and 324-2 coupled with a pair of transmitters 322-1 and 322-2 (Figure 10). The transmitters 322-1 and 322-2 are supplied with a common reference frequency by a common oscillator 321, such that a horizontal polarized wave is transmitted in-phase with a vertical polarized wave (column 9, lines 42-47). Each transmitter has a phase lock oscillator, a frequency mixer and a high power amplifier. A non-regenerative repeater station 300 has an antenna 310 for receiving the H polarized wave and V polarized wave.

Appellants submit that Kagami fails to make up for the deficiency in Fortune of teaching a stationary receiver with a receive antenna having a main lobe and a side lobe arranged to receive a millimeter signal from associated transmit antennas by separate line of sight propagation paths. Thus, at least for this reason, Appellants submit that the rejection fails to establish

prima facie obviousness for claims 25 and 26. Accordingly, Appellants request that the rejection be withdrawn.

Claim Rejection - 35 USC 103: Evans

Claim 27 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Fortune, Hayashikura, and Stanley as applied to claim 18, in view of U.S. Patent 5,920,813 ("Evans"). It is noted that the rejection appears to be in error as it does not state the reference, Stanley. In any case, Applicants respectfully traverse this rejection.

Claim 27 is directed to a millimeter band signal transmitting/receiving system as recited in claim 18 wherein the signal is a video signal.

The argument in the above for claim 18 applies as well to claim 27.

The Office Action admits that neither Fortune nor Hayashikura disclose a video signal. Instead, the final Office Action relies on Evans for teaching a video signal.

Appellants submit that claim 27 is directed to more than just a particular type of signal. Appellants submit that the rejection fails to treat the obviousness of the claim as a whole.

Claim 27 is directed to, among other things, at least one stationary transmitter transmitting a millimeter band video signal through an associated transmit antenna along a plurality of

propagation paths of said millimeter band signal formed by said associated transmit antenna including a line of sight propagation path between said associated transmit antenna and a receive antenna; a stationary receiver receiving the millimeter band video signal through said receive antenna having a main lobe and a side lobe.

Evans is directed to a cellular video distribution system. Some of the disclosed embodiments include omni directional transmitters (Figures 1-5 and 7). However, Evans discloses that such disclosed embodiments can be subject to fading, interference and/or blocking of the transmitted signal (with respect to Figure 6: column 8, lines 9-12, as well as the paragraph at lines 13-47). For example, a subscribing receiver (R30) may be subject to multi-path propagation causing severe signal fading. In order to reduce or avoid such problems, Evans states that the omni directional transmitters can be replaced with directional transmitters carefully sited at nodes around the periphery of respective cells, i.e., edge-fed instead of center-fed (with respect to Figure 9, column 8, lines 48-55). The subscribing receiver is disclosed as being for restoring signal information (column 5, lines 53-55) and includes a capability to feed back information to the transmitter (column 4, lines 57-64; column 6; column 8, lines 25-29).

Evans discloses that reflections from buildings, ground, etc. lead to poor signal reception (column 8, lines 13-23). To solve

this problem Evans discloses use of directional transmitters. Thus, Appellants submit that Evans does not make up for the deficiency in Fortune and Hayashikura, of failing to teach or suggest at least the claimed "normal state" and "obstructed state" for a receiver receiving millimeter band signals through a receive antenna having a main lobe and a side lobe.

Accordingly, Appellants submit that the rejection fails to establish *prima facie* obviousness for claim 27 as a whole. Appellants request that the rejection be withdrawn.

Conclusion

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert W. Downs (Reg. No. 48,222) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Pursuant to the provisions of 37 CFR 1.17 and 1.136(a), Applicant respectfully petitions for a one (1) month extension of time for filing a response in connection with the present application. The required fee of $120.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees

required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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RWD
CG/RWD/csm/slb
0033-0619P

Attachment(s): Dr. Steven R. Best reference, *Antenna Properties and their impact on Wireless System Performance*, 1998 Bushcraft Corporation